

IN THE DRAWINGS

A Request for Approval of Drawing Changes is enclosed to address an informality cited by the Examiner in Figure 1.

REMARKS

Claims 1-38 are pending in the present application. Claims 11 and 17 stand rejected under 35 U.S.C. § 112, and Claims 1-38 stand rejected under 35 U.S.C. § 103(a) over various references. Claims 11 and 17 have been amended to overcome the rejections under 35 U.S.C. § 112. The rejections of Claims 1-38 under 35 U.S.C. § 103(a) are respectfully traversed.

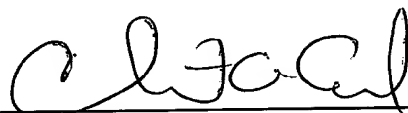
Claims 1, 6, 8-11, 16-19, 24, 26, 28-30, and 32-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohla (U.S. Patent No. 5,390,723). Applicant notes that independent Claims 1 and 24 contain the limitation "and at least one of said side patterns having a core, the core defining an involute imprint surface and a gate to a cavity formed by the first and second impressions." Applicant respectfully asserts that Mohla does not teach or suggest a "core" defining an involute imprint surface and a gate to a cavity. Further, independent Claim 34 includes the limitation "the core has an imprint surface and defines a gate therethrough, the gate defining a backplash." Applicant asserts that Mohla does not contain a core having an imprint surface that defines a gate therethrough, the gate defining a backplash.

Applicant respectfully asserts that each and every limitation of the independent claims are not shown in the references cited. As such, rejection under 35 U.S.C. § 103 is improper.

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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ATTACHMENT FOR SPECIFICATION AMENDMENTS

The following is a marked up version of each replacement paragraph and/or section of the specification in which underlines indicate insertions and brackets indicate deletions.

IN THE TITLE

GREEN SAND CASTING METHOD AND APPARATUS

IN THE SPECIFICATION

[0002] Scroll elements have long been produced in iron base and other alloys using various forms of sand casting. Because, for most applications, these castings must subsequently be extensively machined to very precise tolerances and must be free of injurious defects, it is desirable to minimize casting tolerances and sand related quality problems such as scabs, inclusions and blow-holes. These considerations have tended to favor the application of premium casting methods such as shell molding and lost foam casting. Less costly casting methods, such as various green sand techniques have often been used, but typically with only modest success owing to considerations related to tolerances and quality. For green sand casting, tolerances for the most important casting features, such as the involute of a scroll component, can be improved through the use of shell, cold-box or similar cores and through careful attention to the design of core prints. Additionally, by locating the prints in the same side of the mold as the green sand cast features, tolerances can be further improved. Unfortunately, some sand related quality problems tend to remain. In the case of ordinary low cost horizontally parted molds, well known principles of design of the gating system (runners,

gates, sprue bases, chokes, tails, etc.), can address the root cause of many of these quality problems with some success. In the case of very low cost vertically parted molds, as produced on a [Disa] Disamatic mold making machine, even the most carefully designed conventional gating systems have been less successful in avoiding the generation of loose sand and sand related quality defects.

ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

11. (Amended) The apparatus of claim 10 wherein the [cup] fusible plug has retention ears for coupling to the core.

17. (Amended) The apparatus of claim 15 wherein the fusible [disk] plug is coupled to the core.